



# FROM TIDES TO STORMS: PREPARING FOR NEW HAMPSHIRE'S FUTURE COAST

*Seabrook - Hampton Falls – Hampton - North Hampton – Rye - New Castle - Portsmouth*

Assessing the Risk and Vulnerability of NH Coastal Communities to  
Sea Level Rise and Storm Surge

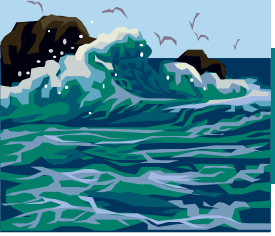
## NH Office of Energy and Planning Spring 2016 Planning and Zoning Conference June 4, 2016

This project is funded by New Hampshire Homeland Security and Emergency Management (HSEM) through a Pre-Disaster Mitigation Grant from the Federal Emergency Management Agency (FEMA).



**Julie LaBranche**  
**Senior Planner**





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### Project Overview

- Evaluate impacts from sea-level rise and storm surge flooding
- Roadways, Critical Infrastructure, Natural Resources

### Project Deliverables

- Maps and Data
- Regional and Municipal Vulnerability Assessment reports

*Portsmouth*

*New Castle*

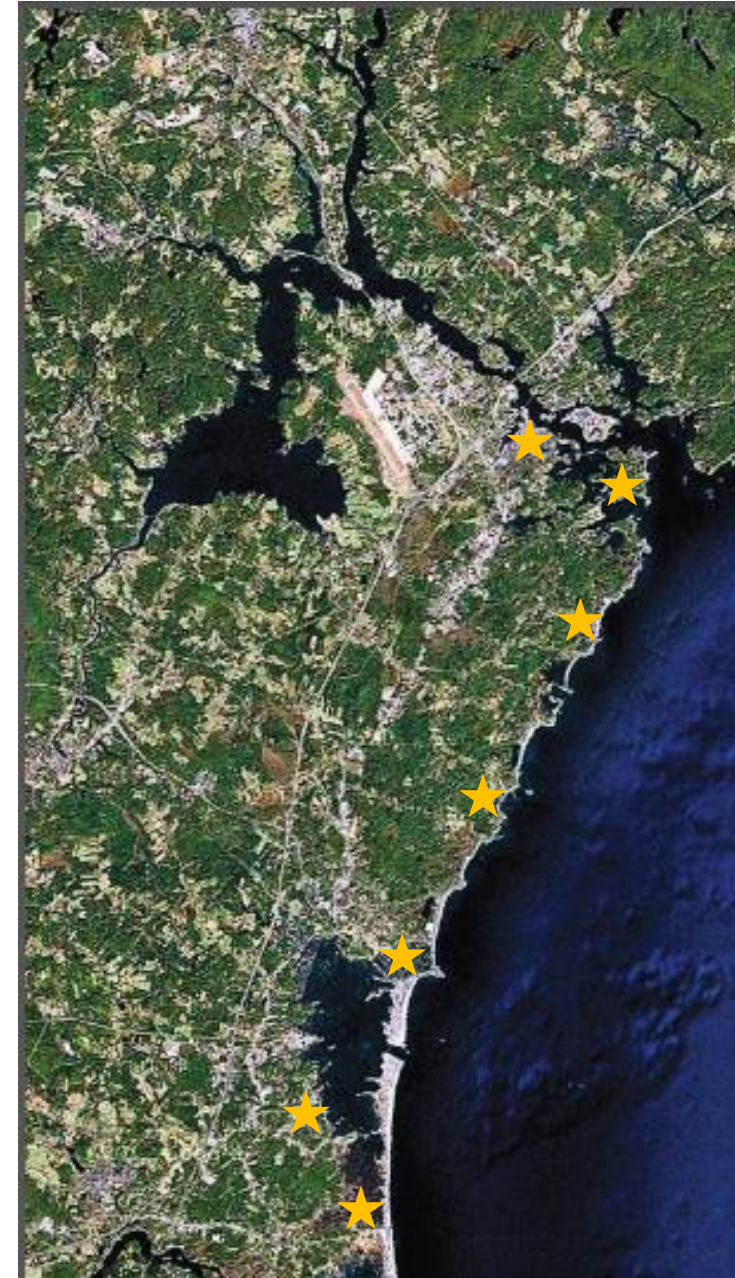
*Rye*

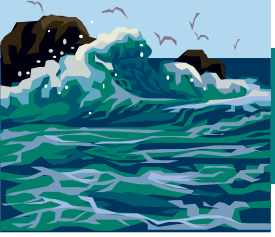
*North Hampton*

*Hampton*

*Hampton Falls*

*Seabrook*





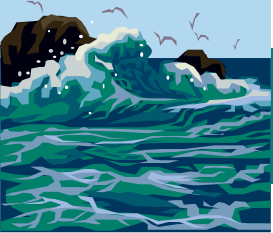
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# Tools and Applications

- ✓ Best-available science
- ✓ Maps and Data
- ✓ Municipal Coordination
- ✓ Implementation Guidance
- ✓ Vehicles for Informed Planning
- ✓ Applicability





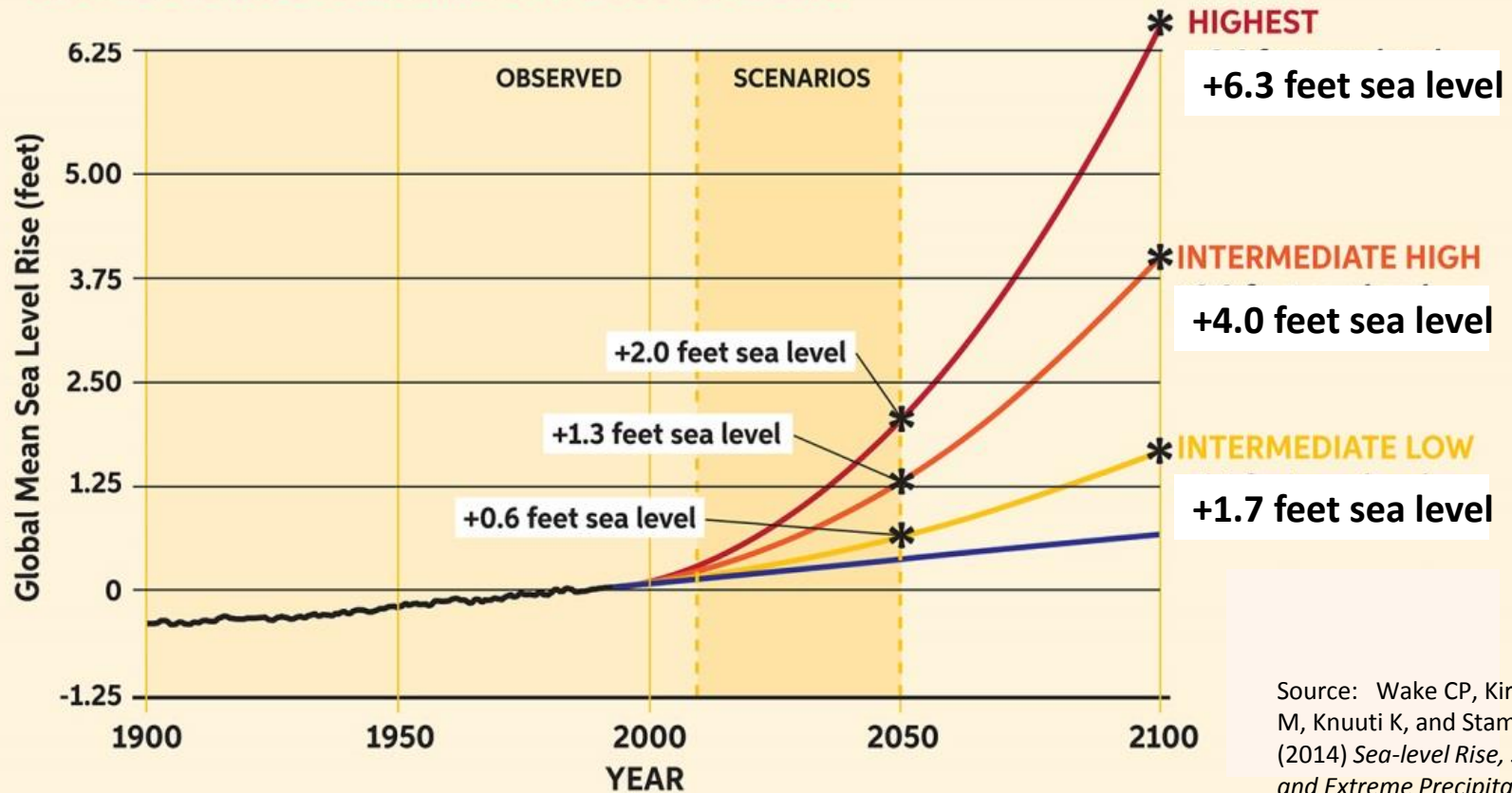


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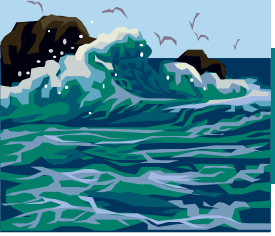


### Best Available Science- SLR Scenarios/Projections

#### SEA-LEVEL RISE SCENARIOS AT 2050 AND 2100



Source: Wake CP, Kirshen P, Huber M, Knuuti K, and Stampone M (2014) *Sea-level Rise, Storm Surges, and Extreme Precipitation in Coastal New Hampshire: Analysis of Past and Projected Future Trends*.



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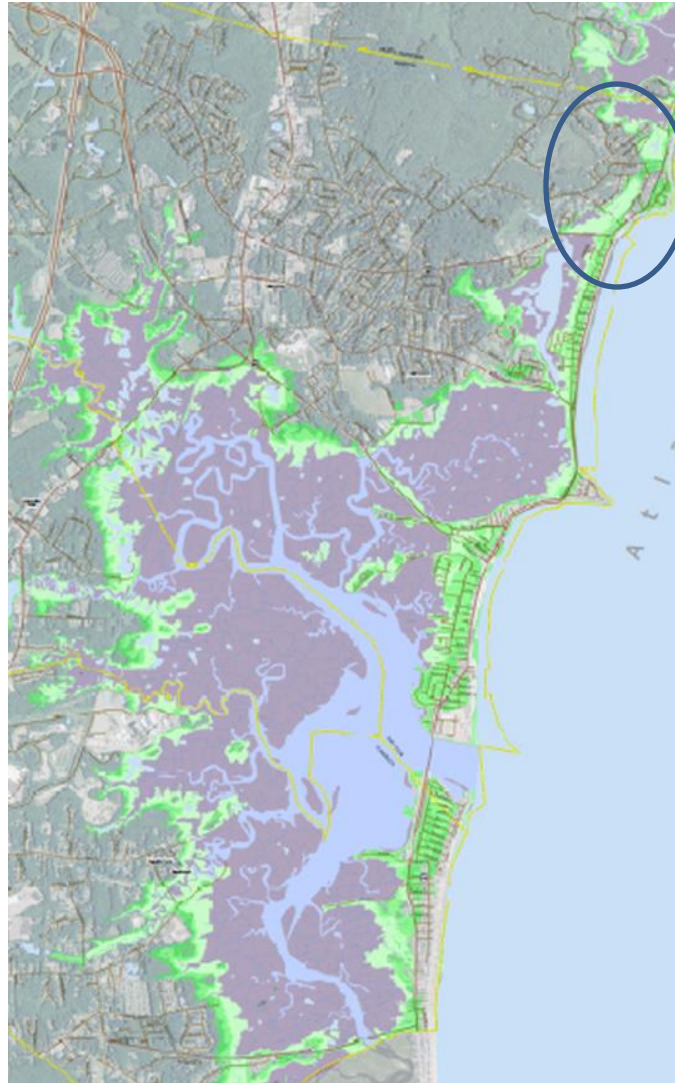


## High-Resolution Mapping

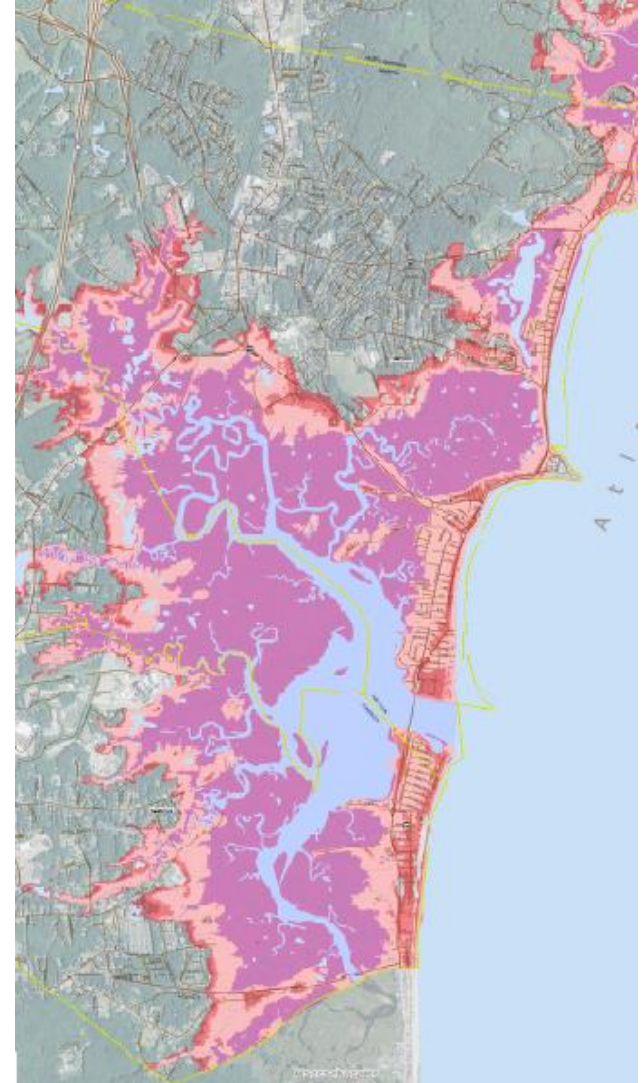
Flood Extents

Impacts to  
assets and  
resources

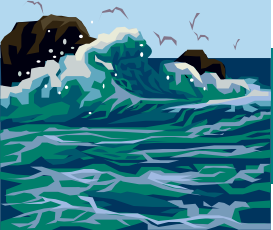
Sea-level rise



Sea-level rise + Storm surge







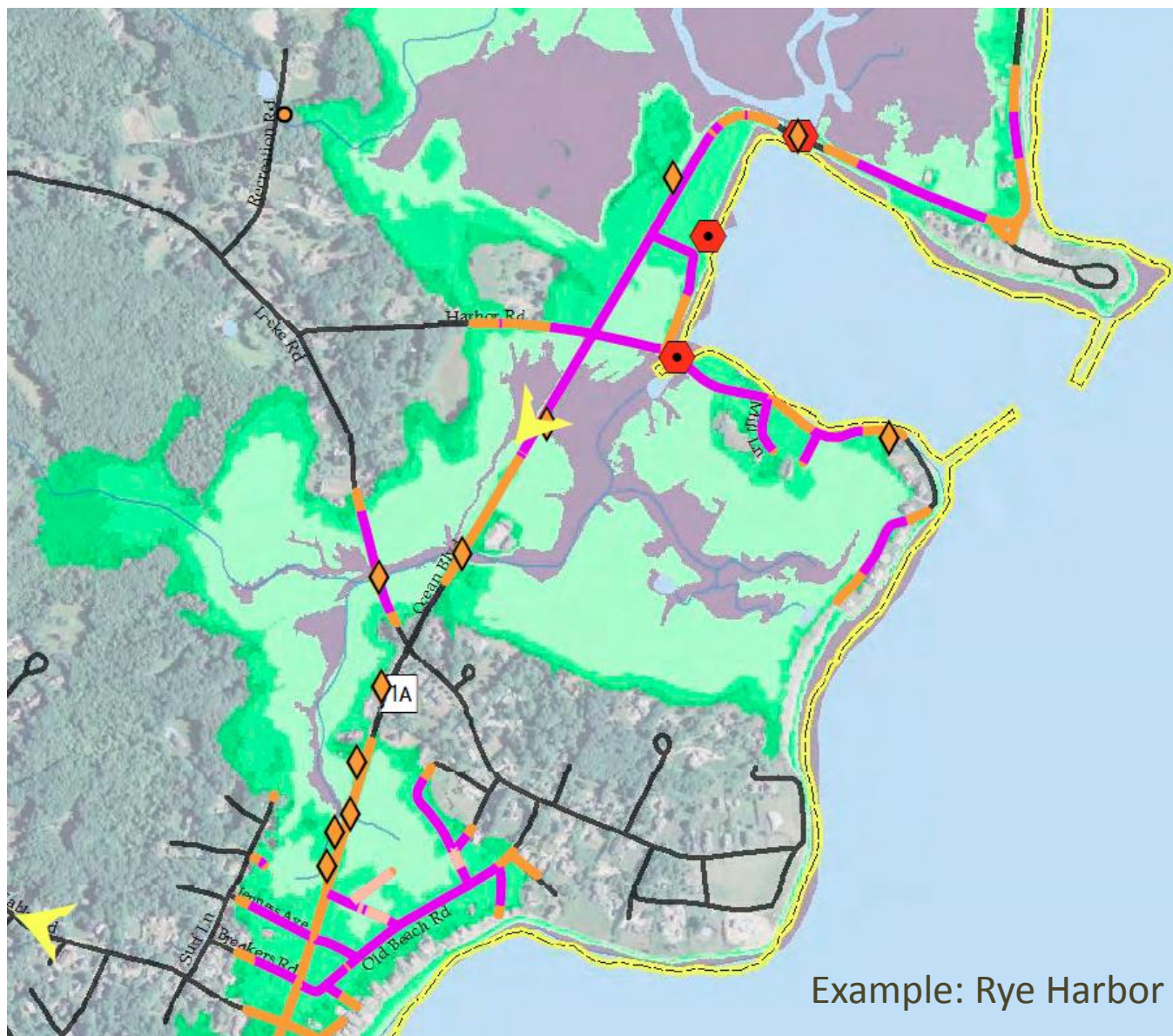
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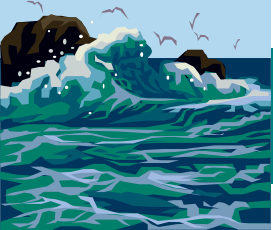
## High-Resolution Mapping

Flood Extents

Impacts to  
assets and  
resources



Example: Rye Harbor

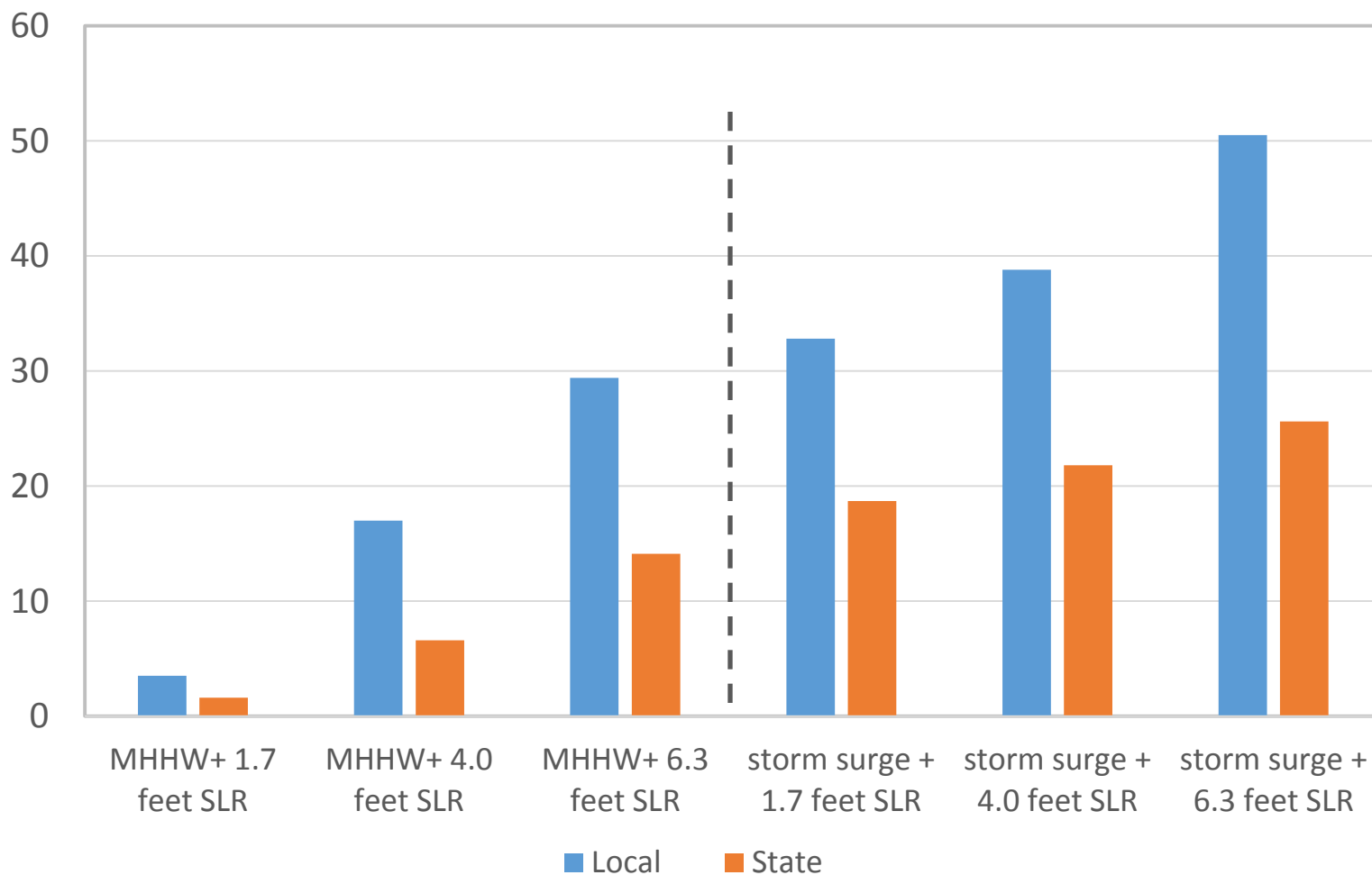


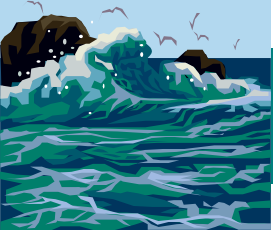
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## Impacts by Asset type

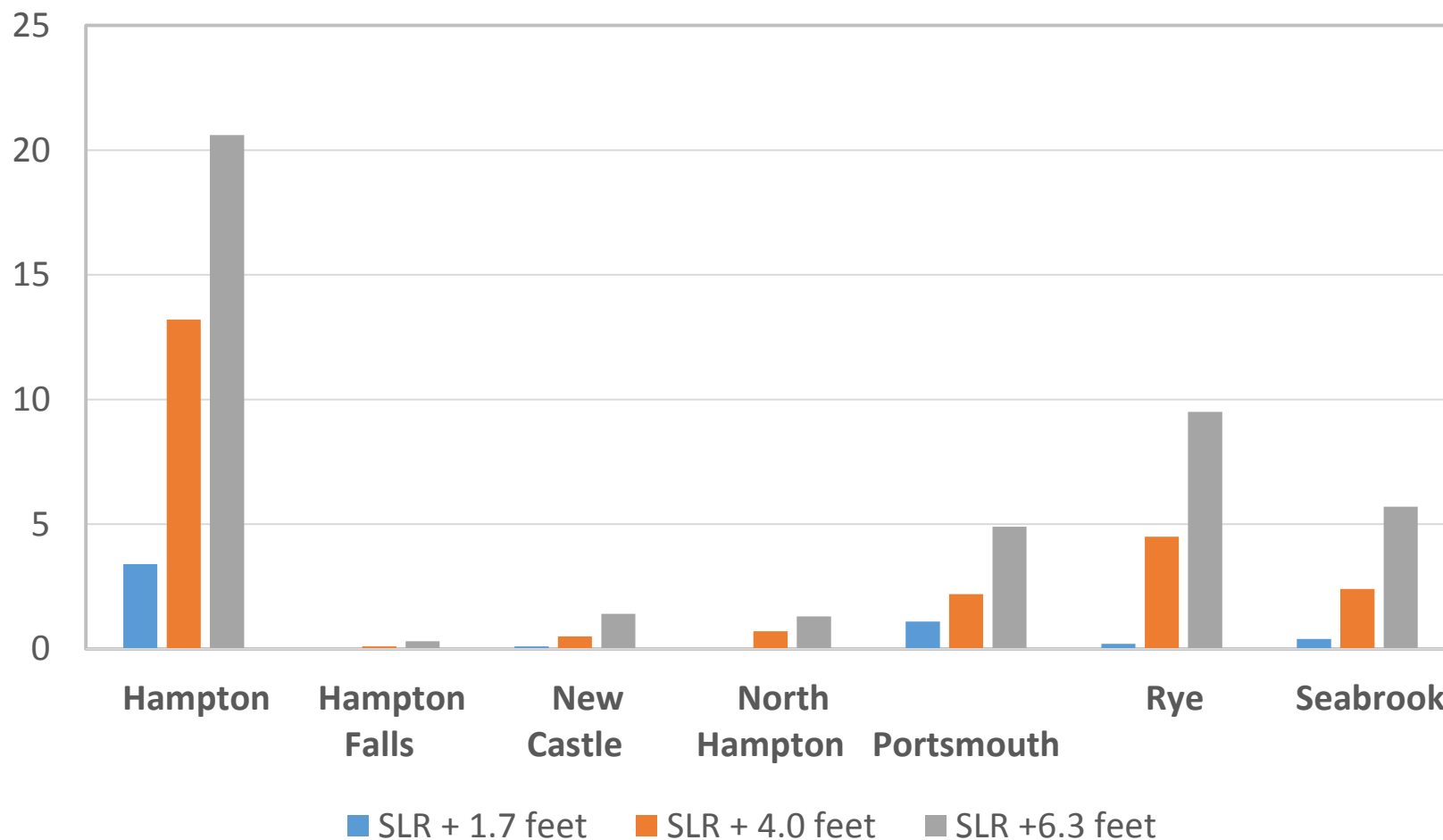
### State and Local Roadways (miles)



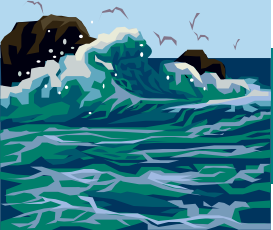


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### Miles of Roadway by Municipality

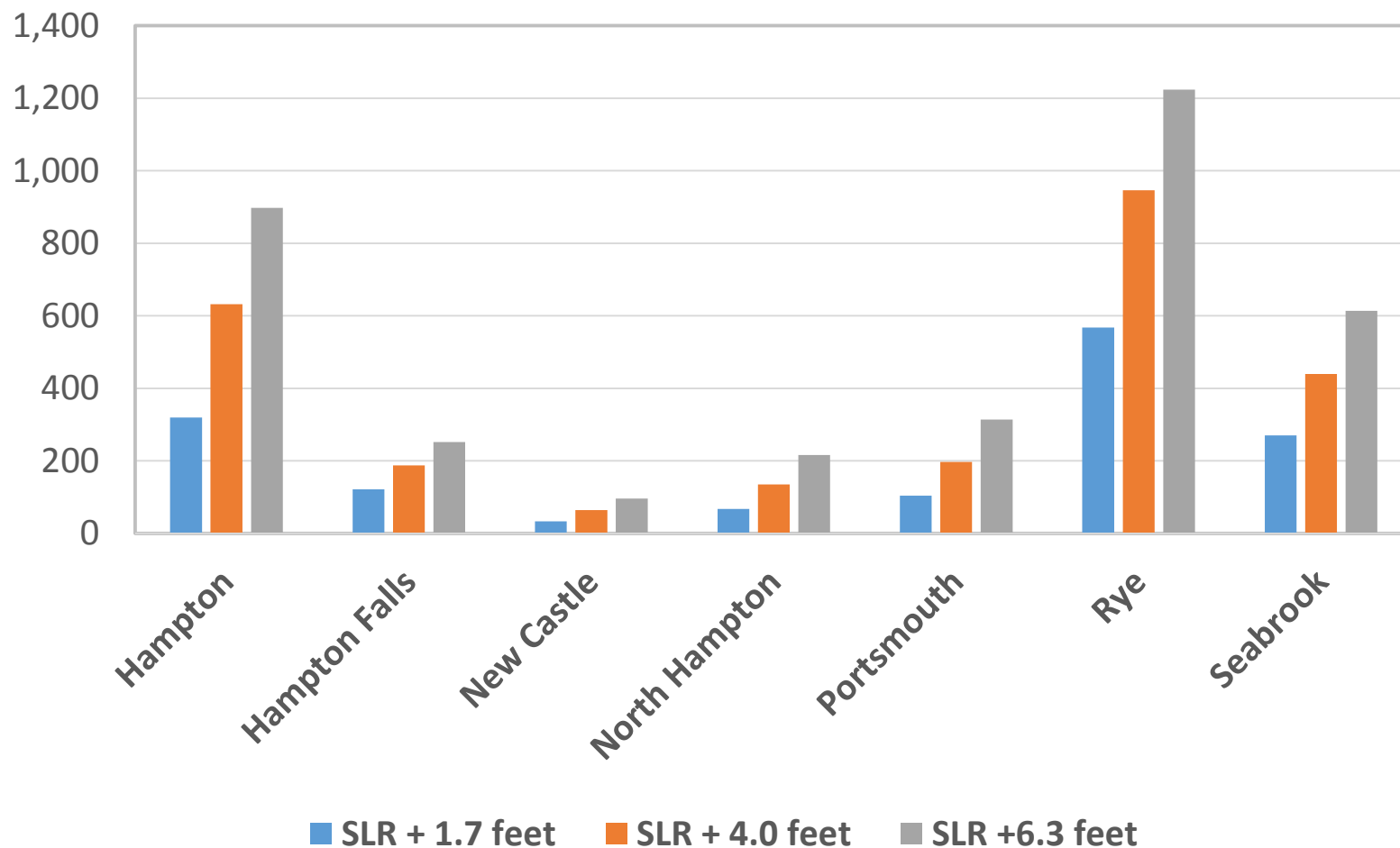


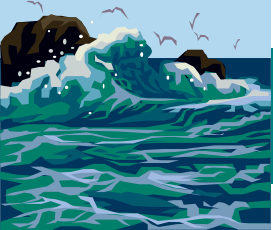




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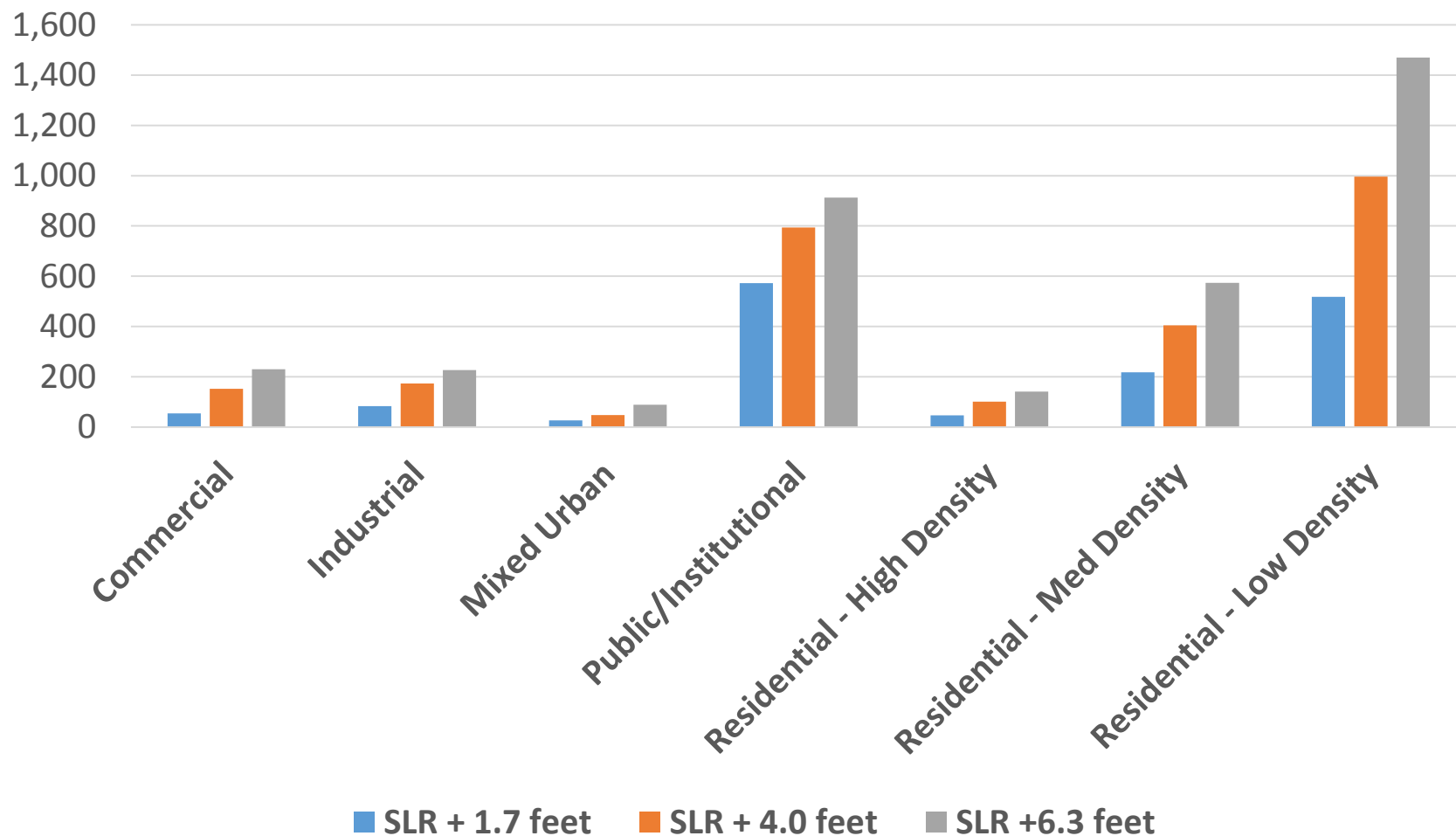
### Upland - acres above mean higher high water

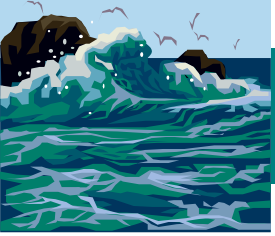




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### Municipal Zoning Districts (acres)





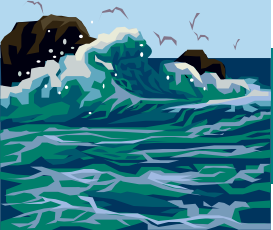
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### Implementation Guidance

- Designing for resiliency in the current 100-year floodplain will protect against long term sea-level rise
- Adaptation strategies need to be customized to address variable conditions
- Iterative actions, not a one-size-fits-all problem
- No-regrets policies and investments
- Periodic review and evaluation of climate science findings, adjust strategies accordingly

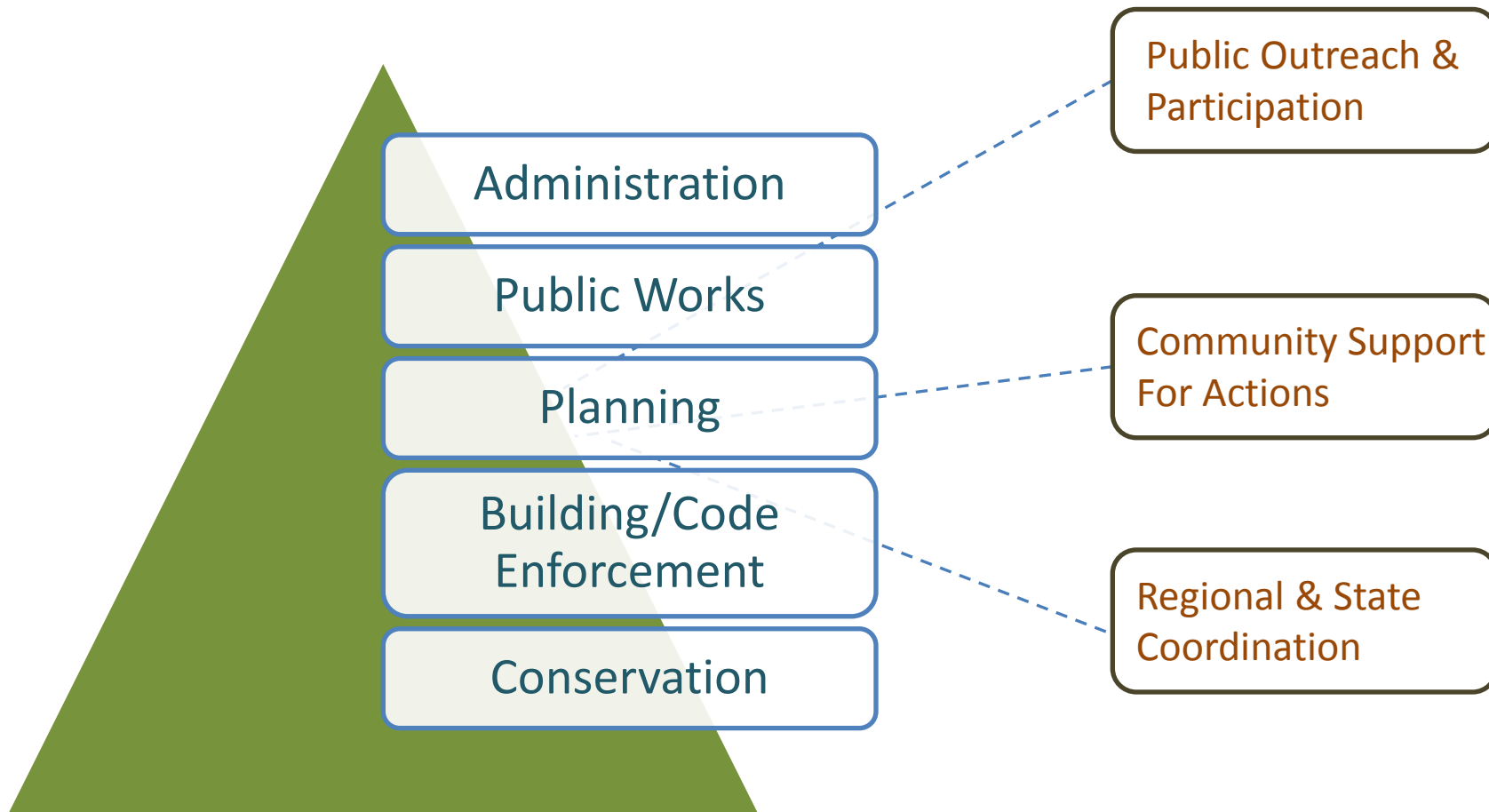


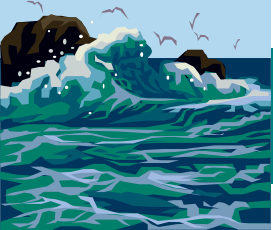


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### Municipal Coordination





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### Vehicles for Informed Planning

#### Vulnerability Assessment

- Critical Infrastructure
- State and Local Roads
- Utilities and Infrastructure
- Natural Resources - Environment

#### Regional Planning Recommendations

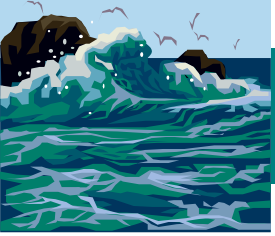
- Policy and Planning Recommendations
- Regulatory Strategies
- Non-Regulatory Approaches

*Local  
Hazard Mitigation  
Plans*

*State Agency  
Plans*

*Regional  
Master Plan*

*Natural Resource  
Conservation*



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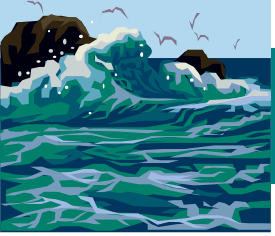


### Project Applicability

How can the project results be useful?

- Inform recommendations in the CRHC Final Report
- Assist regional practitioners with technical assistance and outreach to municipalities
- Guide policy changes by state agencies
- Provide a solid rationale for grant proposals to fund infrastructure improvements, planning and community outreach





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# Project Materials

- Regional Assessment and Maps
- Municipal Assessment and Maps

<http://www.rpc-nh.org/regional-community-planning/climate-change/resources>

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